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REMARKS

Claims 3-10 are currently pending in the present application. Claims 3-7, 9 and 10 are allowed. Claims 3, 8 and 10 have been amended and new dependent claims 11 and 12 have been added in the expectation that the amendments will place all pending claims in this application in condition for allowance. Basis for the amendments is found on pages 2, 3 and 7 of the application, and thus the amendments do not introduce new matter within the meaning of 35 U.S.C. § 132. Accordingly, entry of the amendments is respectfully requested.

1. Objection to the Specification

The Official Action states that the abstract of disclosure and claims 4, 8 and 9 are objected to because of the following formalities:

The abstract of disclosure is objected to because the form and legal phraseology often used in patent claims, such as "means" and "characterized in that", should be avoided, and phrases which can be implied, such as "The disclosure concerns," "The invention relates to", etc. should be avoided. Correction is required. See MPEP §608.01(b)

In claim 4, line 8 "includes" should be changed to produces-or similar term and line 12, delete "and"; in claim 8, line 9 "cathodic" insert -chamber-; and in claim 9, line 8 "includes separable and both of" should be changed similarly and line 14 "solution" should read -solutions-. Appropriate correction is required.

Applicant respectfully thank the Examiner for the suggestions provided to overcome these objections and submit herewith the appropriate amendments, thereby removing the bases for the objections.

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2. Rejection of Claim 8 under 35 U.S.C. § 112, 1st paragraph

The Official Action states that claim 8 is rejected under 35 U.S.C. § 112, first paragraph for the following reasons:

Claim 8 is rejected...as failing to comply with the written description requirement. The claim contains subject matter, which was not described in the specification in such a way as to reasonably convey to one of skill in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not describe the an [sic] irrigating medium 1) comprising a substantially chlorine-free electro-chemically activated, aqueous saline solution and 2) having properties modulated by separate and independent recirculation of the predominately anion-containing solution and/or the predominately cation-containing solution through a counter-electrode chamber. Also the specification does not describe the electro-chemical reactor having a cylindrical through-flow, electro-chemical cell.

Applicant respectfully traverse this rejection. Applicant have amended claim 8 to remove the grounds for this rejection. Accordingly, applicant respectfully request the Examiner to reconsider and withdraw the rejection of pending claim 8.

3. Rejection of Claim 8 under 35 U.S.C. § 112, 2d paragraph

The Official Action states that claim 8 is rejected under 35 U.S.C. § 112, second paragraph for the following reasons:

Claim 8 is rejected...as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what is meant by "a substantially chlorine-free electro-chemically activated, aqueous solution" when the

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specification defines the salt as sodium chloride or potassium chloride. It is questioned whether the above "solution" should be -solutions- as described on page 5 of the Remarks.

Applicant respectfully traverse this rejection. Applicant have amended claim 8 to remove the grounds for this rejection. Accordingly, applicant respectfully request the Examiner to reconsider and withdraw the rejection of pending claim 8.

4. Rejection of Claim 8 under 35 U.S.C. § 102(e)

The Official Action states that claim 8 is rejected under 35 U.S.C. § 102(b) as being anticipated by Malchesky. As the basis of this rejection, the Official Action states:

Malchesky discloses an irrigating medium comprising an electro-chemically activated, aqueous saline solution which includes both an aqueous predominately anion-containing solution and a separate aqueous predominately cation-containing solution having microcidal as well as dispersing and surfactant properties (column 2 lines 10-18). Patentable weight is not given to the limitations containing new matter as described in paragraph 4. Patentable weight is not given to the recitation in the preamble "[a] root canal irrigating medium" because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (COPA 1951). The process and intermediate products used in the process by which the medium is made, i.e., "it is electrochemically activated in an electro-chemical reactor..." are not given patentable weight, because a product claim is properly met if the final product is shown regardless of process used.

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Applicant respectfully traverse this rejection. The test for anticipation is whether each and every element as set forth is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP §2131. The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicant respectfully submits that the amendment to claim 8 provides for a novel product, in this case the irrigating medium, wherein the novel characteristics of the irrigating medium are provided in the form of pH and redox potentials, which are not disclosed by Malchesky. Furthermore, new claims 11 and 12 set out the radical species contained in the anolyte or catholyte, which are also not disclosed by Malchesky. Applicant understands that a final product is not considered novel simply if it derived from a novel process, however applicant submits that it is important to note that the nature and characteristics of electrolytically activated aqueous solutions differ from process to process and electrolytic cell to electrolytic cell.

Applicant has found that there is vast difference in characteristics, like for example pH and redox potential, as well as the nature and presence of certain radical species, in an electrolytically activated aqueous solution, if the aqueous

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predominately anion and cation containing solutions are produced harvested and applied as two separate streams, whether concurrently or successively. More particularly, the characteristics of an electrolytically activated aqueous differ as a result of compositional and processing variables such as feed makeup processing characteristics, including flow sheets, conditions, operating parameters, operating procedures and/or protocols, and the nature of the equipment used.

As previously stated, Malchesky discloses the preparation of an electrolytically activated aqueous solution by utilizing well known methods of dividing a feed stream in two, wherein one stream is sent through the anodic chamber and the other stream is sent through the cathodic chamber to product separate anolyte and catholyte product. See, col. 2, lines 49-64.

Applicant however utilizes a single feed stream, the entirety of which is fed through the cathodic chamber, and subsequently diverts some of the resultant catholyte through the anodic chamber to produce an "attenuated" anolyte. Accordingly, the anolyte is produced from the catholyte solution and not from the original feed stream as in the case in Malchesky.

This process results in aqueous solution with a predominance of anions or cations. Each solution has its own unique characteristics as claimed in claims 8, 11 and 12, but the solutions also have strong synergistic effects when used concurrently. Predominance in this context has the following meaning in that although each solution contains both anionic and cationic species, the degree of prevalence

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of the once species over the other is greater, providing for a solution which has mixed, yet distinct characteristics. As mentioned above, the anolyte may be produced from the catholyte, or vice versa, and although it contains negatively charged anions, such as Cl⁻, it has a positive redox potential and is oxidizing in nature. Due to that fact that: 1) it is derived from a "bulk" catholyte solution and the conversion efficiency of the reactor is not 100%; and 2) there is a semi-permeable ion-exchange membrane between the cathodic and anodic chambers, allowing for the exchange of ion and radicals. There is a large degree of (back-)mixing between the two solutions, resulting in a predominance rather than exclusive presence of anions or cations. Depending on the materials of constructions and design of the semi-permeable membrane, the degree of recycling/reflux of catholyte through the anodic chamber, or anolyte through the cathodic chamber, and the operating parameters, such as pressure, temperature and flow rate, the quality and properties of anolyte or catholyte could be adjusted to achieve required objectives. It is also important to note that as previously explained, catholyte has a negative redox potential and bulk charge, although it contains positively charged cations such as Na⁺ and Ca²⁺.

In light of the above, Applicant respectfully submits that all of the limitations of the present inventive subject matter as claimed in claim 8, 11 and 12 are neither disclosed or taught by the Malchesky patent, and that because the reference does not teach each and every claim limitation as required by *Verdegaal Bros. v. Union Oil Co. of California* either expressly or inherently, that a person of ordinary

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skill in the art would not have been able to arrive at the presently claimed invention based on the teachings of Malchesky. Accordingly, Applicant respectfully request the Examiner to reconsider and withdraw the rejection of pending claim 8 and consider the new claims favorably.

CONCLUSION

Claims 2-12 are currently pending in the present application. Applicant respectfully request the Examiner to reconsider and withdraw the outstanding rejections to claim 8, and allow all the claims in the application.

Respectfully submitted,

NATH & ASSOCIATES PLLC

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Gary M. Nath
Reg. No. 26,965
Tanya E. Harkins
Reg. No. 52,993
Customer No. 20529

NATH & ASSOCIATES PLLC
1030 Fifteenth Street, N.W.
Sixth Floor
Washington, D.C. 20005-1503
Telephone: (202) 775-8383
Facsimile: (202) 775-8396
GNN:TEH\RCA.wpd